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Docket No: NAIIP360/00.148.01 App. No: 09/823,438

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Kevin J. Zilka

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January 23, 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	
Edwards et al.	Group Art Unit: 2137
Application No. 09/823,438	Examiner: Pyzocha, Michael
Filed: March 30, 2001	Date: January 23, 2006
For: VIRUS SCANNING PRIORITIZATION USING PRE-PROCESSOR CHECKING	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF (37 C.F.R. § 1.193)

This Reply Brief is being filed within two (2) months of the mailing of the Examiner's Answer on November 23, 2005.

Following is an issue-by-issue reply to the Examiner's Answer.

Group # 1: Claims 1, 2, 5, 17, 19, 20, 23 and 35

In response to appellant's arguments on page 10 - page 11, first full paragraph in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess first teaches determining if scanning an object is necessary in column 5 lines 38-44, and further teaches prioritizing requests in column 3 lines 14-20 and 42-56. Where the sending of a file to be analyzed, where it is placed on queue, is equivalent to queuing a request that the file be scanned. The queued files are classified and clustered as part of the prioritization step." Note page 13 - page 14, first full paragraph of the Examiner's Answer.

Thus, the Examiner continues to argue that the files in Chess or equivalent to the virus scan requests claimed by appellant. Appellant respectfully disagrees, as a file is not the same as a request under the plain and ordinary meaning of such terms and/or under any definitions/context set forth in the instant application. Note, again, appellant's arguments on pages 10-11 in the appeal brief filed 10/14/05.

Further, even if it were erroneously assumed that appellant's claimed "virus scan request" was met by Chess's file, appellant asserts that there would be nothing in Chess to meet appellant's claimed "object of the request" (emphasis added). Clearly, it would be improper to rely on a single entity (e.g. the file) of Chess to meet two separate and distinct entities claimed by appellant, namely both the claimed "request," and "object" of the request.

Still yet, on page 13 and in the second full paragraph of page 14 of the Examiner's Answer, the Examiner further supports his arguments by asserting the following new inherency argument:

> "In order for the queued files to be classified and clustered as part of the prioritization step they must be taken off of the queue and then placed back onto the queue in the new prioritized order. This is because by definition a queue (taken from Microsoft Press Computer Dictionary Second Edition, 1994) is, "a multi-element data structure from which (by strict definition) elements can be removed only in the same order in which they were inserted." Therefore when the files are classified and clustered, as part of prioritization, the files must be taken off of the queue and placed back on the queue in the new (prioritized) order so they can be removed and scanned in the prioritized order."

However, it appears that the Examiner has based his argument on a definition that fortuitously suits his argument. More importantly, the Examiner's conclusion that "the files must be taken off of the queue and placed back on the queue in the new (prioritized) order" is not only not even suggested by Chess, but is also not true. Files would not have to be taken off of the queue and placed back on the queue in the new (prioritized) order. For example, the files may remain in the queue, but be equipped with tags that track prioritization and provide for which files are taken off. Again, in the above example, files would not have to be taken off of the queue, as purported by the Examiner.

It appears that the Examiner has relied on an inherency argument regarding the above emphasized claim limitations. In view of the arguments made hereinabove, any such inherency argument has been adequately rebutted, and a notice of allowance or a specific prior art showing

of such claim features, in combination with the remaining claim elements is respectfully requested. (See MPEP 2112)

Moving on, in response to appellant's arguments on page 11, second and third full paragraphs in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[a]s disclosed in Chess column 3 lines 53-56 the classifying, which is part of the prioritization, is done according to the type of digital object the files (requests) contain. Therefore a characteristic for which the requests are prioritized is the type of digital object they contain." Note page 14, second full paragraph of the Examiner's Answer.

In response, appellant again points out that the above argument is based on the assumption that it is appropriate for the Examiner to rely on Chess's files to meet both appellant's claimed "request" and "object" of the request. Since this assumption is clearly improper in view of the aforementioned assertions, appellant again contends that Chess's prioritization of the files based on characteristics of the files does not meet appellant's claimed "placing the virus scan request on a queue in a priority order based on a characteristic of the virus scan request" (emphasis added), as claimed.

Even still, in response to appellant's arguments on page 11, last paragraph – page 12, first paragraph in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches determining if an object needs to be scanned in column 5 lines 38-44 where the described malicious file is described as a virus in column 3 lines 46-47." Note page 14, last paragraph of the Examiner's Answer.

In response, appellant yet again points out that the above argument is based on the assumption that it is appropriate for the Examiner to rely on Chess's files to meet both appellant's claimed "request" and "object" of the request. Since this assumption is clearly improper in view of the aforementioned assertions, appellant again contends that Chess does not teach "checking a virus scan request to determine if scanning an object of the request is necessary," as specifically claimed by appellant (emphasis added). Instead, Chess merely suggests checking files (not virus scan requests) for processing based on characteristics of the files.

Still yet, in response to appellant's arguments on page 12, first full paragraph – page 13, first paragraph in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[a]s taught in Chess column 2 lines 18-21 either a person or a process within the computer can determine a file is suspect and send it for scanning. Wong teaches, in column 4 lines 14-40, prioritization based on the type of person. Therefore the combination of Chess and Wong teaches that a person (the administrator as compared to a regular user of Wong) is triggering the request and the priority is based on this characteristic. Appellant further argues that Wong merely teaches assigning priority based on types of applications or input from either a user or network administrator. In the combination of Chess and Wong this input is the scan request." Note page 15, first paragraph of the Examiner's Answer.

Following are the excerpts relied upon by the Examiner:

> "Furthermore, the nodes can be logical so that a file determined to be suspect by a human user or by a process within a client computer 110 can be forwarded to another process (node) within the client computer 110." (Chess; col. 2, lines 18-21)
>
> "Whenever an outbound packet is to be transmitted, the software module 208 checks the queue 209 to determine how many buffers are empty or otherwise available. The software module compares this with the priority of the outbound packet. The priority of the outbound packet is assigned according to the application program which generated that particular packet. Each application program is initially assigned a priority level by the prioritization software module 208. The priority assigned is based upon the degree of importance or level of time-critical information that is being generated by that particular application. For example, application 205 might be a network administration program; application 206 might be a web browser; and application 207 might be an e-mail program. The software module would then assign the highest priority to the network administration program because it is important to monitor the network and be notified of any potential error conditions. The web browser application would be assigned a lower priority because it is not as important for the user to retrieve web pages as it is for the network administrator to manage the network. The e-mail application would be assigned the lowest priority because it often does not matter whether the e-mail message is received the next second, minute, or even hours later. The software module 208 can base its priority assignments on input from the user or network administrator. Alternatively, software module 208 can consult a stored table of applications and their default priorities." (Wong; col. 4, lines 14-41)

In response, it appears that the Examiner has not taken into consideration the full weight of appellant's claims. Specifically, appellant notes that the mere mention that a file can be forwarded to a node if found suspect by a human user in no way rises to the level of specificity of appellant's claimed virus scan request prioritization that is based on a "characteristic including

... an **identity of the** user triggering the virus scan request ... wherein the virus scan request is prioritized based on at least one of the user identity being an administrator as compared to a regular user" (emphasis added - see Claim 1 and similar, but not identical, language in remaining independent claims). Neither the Chess nor Wong references suggest virus scan request prioritization that is based on an identity of the user triggering the virus scan request, as claimed.

Moving on, in response to appellant's arguments on page 14, in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[a]ccording to MPEP 2141.01(a), "the reference may be considered analogous art if subject matter disclosed therein is relevant to the particular problem with which the inventor is involved." In this case the problem to be solved is to improve the efficiency of processing requests. Wong relates to improving the effectiveness and efficiency of processing time-critical data (see column 1 lines 34-36 and column 2 lines 10-20). Therefore Wong is relevant to the particular problem being solved so it is analogous art." Note page 15, last paragraph – page 16, first paragraph of the Examiner's Answer.

It appears that the Examiner has simply generalized the problem associated with the present invention to an extent that the problem solved by Wong becomes analogous, for the purpose of conveniently supporting his arguments. Of course, if generalized sufficiently, all arts can be found to be analogous in some capacity. However, appellant's problem clearly relates to "scanning data for presence of certain characteristics, such as virus code" (see line 5, page 2 of original application), which is clearly *non-analogous* with respect to Wong.

Group # 2: Claims 3 and 21

In response to appellant's arguments on page 14 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "with a queue the object must be taken off in the same order they are placed, therefore whenever an object is selected for scanning it is selected based on a priority." Note page 16, second full paragraph of the Examiner's Answer.

Appellant respectfully disagrees. Chess teaches that "for each similarity cluster, one or more representatives [are chosen]." Thus, the representatives are not chosen based on the queue, but

instead are chosen based on similarity clusters within each category. After careful review of the entire Chess reference, appellant notes that Chess further discloses that a "variety of possible methods exist for choosing a representative file" including "choosing the smallest file from each group...sending that file which seems likely to be easiest to analyze...choosing a file which seems to be the result of malicious-code infection of one of a set of known non-malicious files, or choosing that file which compresses the best" (see Col. 7, lines 38-49).

Clearly, Chess teaches selecting representatives based on criteria that do not include a "priority order," as claimed by appellant. Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 3: Claims 4, 9, 22 and 27

In response to appellant's arguments on pages 15-16 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[i]n Chess the files are classified and clustered based on a characteristic (see Col. 3 lines 48-56), [and that] therefore whenever an object is selected for scanning it is selected based on this characteristic." Note page 16, third full paragraph of the Examiner's Answer.

Appellant respectfully asserts that the excerpt relied on by the Examiner only teaches that the files are classified "according to the type of digital object they contain." Clearly, only classifying files according to a characteristic does not meet appellant's claimed "selecting...one of the virus scan requests from the queue...based on the characteristic of the virus scan request," when read in context.

In fact, appellant notes that Chess only teaches specific methods for choosing a representative to be scanned, including "choosing the smallest file from each group...sending that file which seems likely to be easiest to analyze...choosing a file which seems to be the result of malicious-code infection of one of a set of known non-malicious files, or choosing that file which compresses the best" (see Col. 7, lines 38-49). Appellant respectfully emphasizes that what is claimed is "selecting...based on the characteristic of the virus scan request" where the characteristic of the virus scan request includes "at least one of an identity of the user triggering

the virus scan request, a type of the process accessing the object, a time stamp of when the virus scan request was received, and an indication of a network node accessing the object" (see independent claims for context). Clearly, Chess' criteria for selecting representatives to be scanned does not meet appellant's claimed "characteristic," when read in context.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 4: Claims 7, 8, 25 and 26

In response to appellant's arguments on page 16 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches classifying queued requests based on a characteristic in column 3 lines 53-56" and that "Chess further describes a comparing of characteristic during the updating in column 4 lines 6-13, where the system determines other queued files being in the same cluster as the one which was scanned, and these files were classified and clustered based on a characteristic." Note page 17, first paragraph of the Examiner's Answer.

Appellant respectfully asserts that the characteristic Chess utilizes to cluster the requests is the "similarity of the possibly-malicious code in each file" (see Col. 6, lines 63-67). Thus, Chess updates prioritizing information according to files with similar possibly-malicious code. Clearly, such characteristic utilized in Chess does not meet appellant's claimed characteristics when read in context, namely "at least one of an identity of the user triggering the virus scan request, a type of the process accessing the object, a time stamp of when the virus scan request was received, and an indication of a network node accessing the object" (see independent claims for context). Due to such clear distinction, Chess does not teach appellant's claimed "priority order [that] is further based on comparing the characteristic of the virus scan request with the characteristic of the virus scan request previously placed on the queue."

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 5: Claims 10, 11, 28 and 29

In response to appellant's arguments on page 17 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches such comparison in column 4 lines 6-13, where the system determines other queued files being in the same cluster as the one being scanned, and these files were classified and clustered based on a characteristic." Note page 17, first full paragraph of the Examiner's Answer.

Appellant respectfully notes that Chess only discloses "identifying one ore more other queued files as being in the same cluster as the file [determined to be probably malicious]" such that the prioritizing is only updated based on a file already determined to be probably malicious, and not "based on...virus scan requests whose objects are currently being scanned," as claimed by appellant (emphasis added).

To emphasize, appellant respectfully points out Col. 8, lines 9-17 from Chess which clearly teach that "[i]f a match is found...[and] if any other files still in the queue are in the same cluster as a file for which a match is found...those files are moved up in transmission priority." Thus, in Chess the priority is not updated until after a file is scanned and found to be malicious, but not according to "virus scan requests whose objects are currently being scanned," as claimed by appellant (emphasis added).

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Issue # 2:

The Examiner has rejected Claims 18 and 36 under 35 U.S.C. 103(a) as being unpatentable over Chess et al., U.S. Patent No. 6,560,632 in view of Wong, U.S. Patent No. 5,974,465, in further view of McAfee (webpage).

Group # 1: Claims 18 and 36

Such claims are deemed allowable for the reasons base Claim 1 is deemed allowable.

Issue # 3:

The Examiner has rejected Claims 37-41 and 43-53 under 35 U.S.C. 103(a) as being unpatentable over Chess et al., U.S. Patent No. 6,560,632 in view of Wong, U.S. Patent No. 5,974,465, in further view of "Reserved-Checkout for Versioned Object" IBM 1993.

Group # 1: Claims 37, 38, 41 and 53

Such claims are deemed allowable for the reasons based Claim 1 is deemed allowable.

In response to appellant's arguments on page 18 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "on page 3 IBM teaches giving the object with the smallest timestamp the highest priority" and that "the objects in IBM are the request for scanning of Chess, which will give a higher priority to the request with a timestamp with the smallest (earliest) timestamp." Note page 18, first paragraph of the Examiner's Answer.

Appellant respectfully asserts that such argument fails to consider the full weight of appellant's claim language. In particular, appellant claims that "the virus scan request is prioritized based on... the time stamp being earlier than the time stamps of each scan request previously placed on the queue" (emphasis added). IBM only relates to reservation objects with a highest priority and reservation objects with the same priority, but does not to specifically disclose a situation where a reservation object is "earlier than the time stamps of each scan request previously placed in the queue," as claimed (emphasis added). Furthermore, neither Chess nor Wong teach prioritizing a scan request with scan request[s] previously placed in the queue," as claimed (emphasis added).

Still yet, appellant again respectfully asserts that that IBM relates to checking out objects where reservations can be made to check out objects when such objects are already checked out. IBM simply does not teach placing a "checked virus scan request on a queue in a priority order based on... a time stamp of when the virus request was received," in the specific manner claimed by appellant (emphasis added). The only priority with respect to timestamps disclosed by IBM

relates to reservations where a user with a reservation for an object with a highest priority (earliest timestamp) will have first priority in receiving the object over users with reservations with lower priority (later timestamps). Clearly, prioritizing reservations for objects, as in IBM, does not meet any sort of technique "wherein the virus scan request is prioritized based on ... the time stamp being earlier than the time stamps of each scan request previously placed on the queue," as specifically claimed by appellant (emphasis added).

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 2: Claim 39

In response to appellant's arguments on page 19 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "with a queue the objects must be taken off in the same order they are placed, therefore whenever an object is selected for scanning it is selected based on priority." Note page 18, second full paragraph of the Examiner's Answer.

Appellant points out the arguments presented above in Issue #1, Group #2 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 3: Claims 40 and 45

In response to appellant's arguments on pages 19-20 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[i]n Chess the files are classified and clustered based on a characteristic (see column 3 lines 48-56), therefore whenever an object is selected for scanning it is selected based on this characteristic." Note page 18, last paragraph – page 19, first paragraph of the Examiner's Answer.

Appellant respectfully points out the arguments presented above in Issue #1, Group #3 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 4: Claims 43 and 44

In response to appellant's arguments on pages 20-21 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches classifying queued requests based on a characteristic in column 3 lines 53-56" and that "Chess further describes a comparing of characteristic during the updating in column 4 lines 6-13, where the system determines other queued files being in the same cluster as the one which was scanned, and these files were classified and clustered based on a characteristic." Note page 19, second paragraph of the Examiner's Answer.

Appellant respectfully points out the arguments presented above in Issue #1, Group #4 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 5: Claims 46 and 47

In response to appellant's arguments on page 21 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches such comparison in column 4 lines 6-13, where the system determines other queued files being in the same cluster as the one being scanned, and these files were classified and clustered based on a characteristic." Note page 19, last paragraph – page 20, first paragraph of the Examiner's Answer.
Appellant respectfully points out the arguments presented above in Issue #1, Group #5 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Issue # 4:

The Examiner has rejected Claim 54 under 35 U.S.C. 103(a) as being unpatentable over Chess et al., U.S. Patent No. 6,560,632 in view of Wong, U.S. Patent No. 5,974,465, in further view of "Reserved-Checkout for Versioned Object" IBM 1993, in further view of McAfee (webpage).

Group # 1: Claim 54

Such claim is deemed allowable for the reasons base Claim 37 is deemed allowable.

Issue # 5:

The Examiner has rejected Claims 55-59 under 35 U.S.C. 103(a) as being unpatentable over Chess et al., U.S. Patent No. 6,560,632 in view of Wong, U.S. Patent No. 5,974,465, in further view of "Reserved-Checkout for Versioned Object" IBM 1993, in further view of "Chapter Thirteen Performance Tuning" (webpage), in further view of Using Netware 3.12 (webpage).

Group # 1: Claims 55, 56, and 59

Such claim is deemed allowable for the reasons Claim 1 is deemed allowable.

In response to appellant's arguments on pages 22-25 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "Chess teaches that an application can access and send the object to be scanned (see column 2 lines 18-21); [and that] therefore the priorities given in Performance can be applied to the priorities of Chess." Note page 20, last paragraph – page 21, first paragraph of the Examiner's Answer.

Appellant respectfully disagrees. Such excerpt in Chess teaches that a process within a client computer can determine a file to be suspect, but not that the process that makes such determination is any sort of "characteristic of the virus scan request," as claimed by appellant (emphasis added).

The Examiner also argues that numbers 25-31 on page 4 of Performance disclose that the process type is an operating system process. Appellant respectfully asserts that such excerpt only discloses "Real-time value accessible to the operating system only" and that such is related to "System-accessible process priorities" (see 16-31). Clearly, values that are only accessible by the operating system, as in Performance, do not meet appellant's claimed "process type being an operating system." To emphasize, appellant claims that the process is an operating system process and not merely that the process is accessible by the operating system as disclosed in Performance.

Furthermore, the Examiner argues that "Chess teaches that a client can access and send the request to the scanning center and it is well known that a network has clients and servers" such that "[i]t would, therefore, been obvious to change the priority based on whether the request was from a client [or] server in order to prevent receipt of messages (requests) from clients as taught by Netware." Appellant respectfully asserts that Chess only generally teaches that a process within a client computer can determine a file to be suspect (see Col. 2, lines 18-21). Simply because a client process may determine a file to be suspect does not relate to any sort of indication, let alone where such indication is "that the object is accessed from a server console as compared to a network client," as specifically claimed by appellant (emphasis added).

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 2: Claim 57

In response to appellant's arguments on page 25 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "with a queue the objects must be taken off in the same order they are placed, therefore whenever an object is selected for scanning it is selected based on priority." Note page 21, second full paragraph of the Examiner's Answer.

Appellant points out the arguments presented above in Issue #1, Group #2 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

Group # 3: Claim 58

In response to appellant's arguments on page 26 in the appeal brief filed 10/14/05 (which is incorporated herein by reference), the Examiner argues that "[i]n Chess the files are classified and clustered based on a characteristic (see column 3 lines 48-56), therefore whenever an object is selected for scanning it is selected based on this characteristic." Note page 21, last paragraph – page 22, first paragraph of the Examiner's Answer.

Appellant points out the arguments presented above in Issue #1, Group #3 which clearly rebut such argument.

Appellant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, for the reasons set forth hereinabove.

In view of the remarks set forth hereinabove, all of the independent claims are deemed allowable, along with any claims depending therefrom.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1351 (Order No. NAI1P360_00.0148.01).

Respectfully submitted,

By: _____ Date: 1/23/06

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